Center Independent Research & Development: JPL IRAD

Advanced Power Conversion and Distribution - Efficient Power for JPL Spacecraft

Completed Technology Project (2012 - 2013)

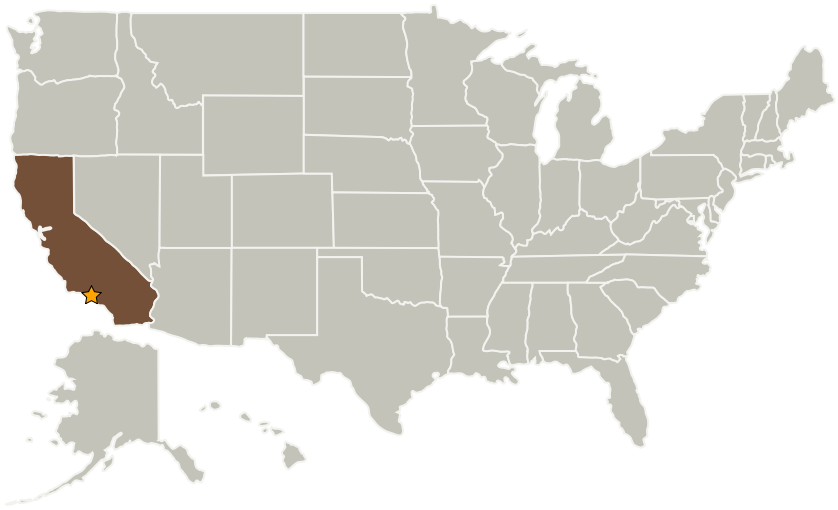
Project Introduction

We will develop a power conversion solution that will increase end-to-end efficiency to 80% or more compared to the 30%-50% efficiency typically obtained through use of Commercial Off The Shelf (COTS) converters and linear regulators. This initiative will address the strategy and capabilities required for optimal spacecraft power system design by developing an end-to-end power conversion solution. The specific goal is to improve the efficiency and reliability of the power conversion process from the power bus to the end user at the point of load.

Anticipated Benefits

Missions will benefit from more efficient power conversion solutions.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
★Jet Propulsion Laboratory(JPL)	Lead Organization	NASA Center	Pasadena, California

Primary U.S. Work Locations
California

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Table of Contents

Organizational Responsibility

Responsible Mission Directorate:

Mission Support Directorate (MSD)

Lead Center / Facility:

Jet Propulsion Laboratory (JPL)

Responsible Program:

Center Independent Research & Development: JPL IRAD

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Project Management

Program Manager:

Fred Y Hadaegh

Project Manager:

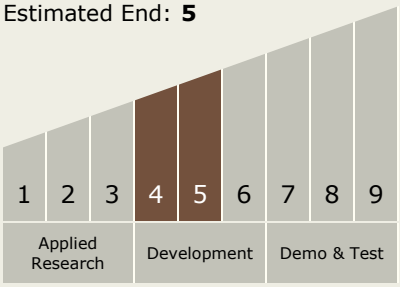
Jonas Zmuidzinas

Principal Investigator:

Gregory S Cardell

Technology Maturity (TRL)

Start: **4**
Estimated End: **5**



Technology Areas

Primary:

- TX03 Aerospace Power and Energy Storage
  - TX03.3 Power Management and Distribution
    - TX03.3.3 Electrical Power Conversion and Regulation